

REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-15 are pending in this application, of which claims 1-5 are withdrawn from consideration. By this Amendment, claims 6, 11, and 12 are amended, and new claims 16-19 are added to secure an appropriate scope of protection to which Applicants are believed entitled. Support for new claims 16-17 is provided by Fig. 3 and the supporting disclosure at page 9, lines 7-8. Support for new claims 18-19 is provided on page 12, line 9 of the originally filed specification.

Accordingly, claims 6-19 are pending in this application.

Applicants' appreciate the Examiner participation to a telephone interview held on December 21, 2010. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below and constitute Applicants' record of the interview.

Claim Rejections Under 35 USC §103(a)

Claims 6-7 and 15 stand rejected under 35 USC 103(a) over Ballantine et al. (US 6,488,778), Shao et al. (US 6,437,290), Wu (US 20030235990), Bottomfield (US 6,506,312), Honma (US 5,981,966), Chen et al. (US 6,646,235), Holden et al. (US 5,911,896) and Bagley et al. (US 6,528,767).

Claim 8 stands rejected under 35 USC 103(a) over Ballantine in view of Shao, Wu, Chen, Honma, Bottomfield, Holden, and Bagley as applied to claim 6 and further in view of Tsao (US 4,752,815).

Claims 9 and 10 stand rejected under 35 USC 103(a) over Ballantine, Shao, Wu, Chen, Honma, Bottomfield, Holden, and Bagley as applied to claim 6 and further in view of Tsao, and Beinglass et al. (US 5,940,733).

Claim 11 stands rejected under 35 USC 103(a) over Ballantine, Shao, Wu, Chen, Honma, Bottomfield, Holden, Bagley Tsao, Beinglass, and further in view of Brabant et al. (US 2003/003628268) and Chang et al. (US 5,043,299).

Dependent claim 13 stands rejected under 35 USC 103(a) over Ballantine, Shao, Wu, Chen, Honma, Bottomfield, Holden, Bagley Tsao, Beinglass, and Chang in view of Adetutu (US 5,958,508).

Claim 14 stands rejected under 35 USC 103(a) over Ballantine, Shao, Tsao, Beinglass, Wu, Chen, Honma, Holden, Bagley, Bottomfield, and further in view of Aoki (US 5,242,666).

Claim 12 stands rejected under 35 USC 103(a) over Ballantine, Shao, Tsao, Bottomfield, Wu, Chen, Honma, Holden, Bagley, Beinglass, Aoki, and further in view of Yamoto et al. (US 6,399,429).

Whether or not the claimed subject matter would have been obvious at the time of invention to one of ordinary skill in the art is a question of law based on underlying facts. *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1348, 53 USPQ2d 1580 (Fed. Cir. 2000). The relevant factual inquiries include the following factors:

(1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) any relevant secondary considerations.... *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966).

Here, factual questions and the ultimate legal conclusion are in dispute.

Claims 6 and 9 recite a method of manufacturing a semiconductor device that includes depositing a metal film by sputtering. Ballantine discloses a technique of low-pressure chemical vapor deposition rather than sputtering. The Examiner relies on Wu to assert the equivalent efficacy of LPCVD and sputtering as applied to the fabrication of a MOSFET.

Applicants traverse the rejections, disputing what the asserted references teach, and more particularly, the Examiner's finding that "it would have been obvious to one of ordinary skill in the art to incorporate sputtering instruments within the Ballantine's processing chamber to achieve the predictable result of MOSFET fabrication via sputtering" (see Office Action, page 3, lines 20+).

As presented during the telephonic interview with Examiner Ford, and as indicated in the interview summary, independent claims 6 and 9 both recite a method of metal film deposition using a sputtering process, whereas Ballantine avails a cassette to perform CVD processing. Sputtering

cannot be performed upon wafers stacked vertically in a cassette. To do so would render the chamber of Ballantine inoperable for the intended purpose of metal deposition on a stack of substrates.

Applicants respectfully submit, therefore, that it would not have been obvious to incorporate sputtering instruments within the vertically stacked substrate chamber of Ballantine. Therefore, Applicants respectfully submit that in regards to the vertically stacked substrate chamber disclosed by Ballantine, LPCVD is not an equivalent process to sputtering for metal layer deposition.

None of the other applied references remedy the above noted deficiency of Ballantine and Wu, and the Examiner does not urge otherwise.

Based upon the above disclosure, Applicants respectfully submit that the asserted combination of references present no apparent reason to combine references or modify prior art to create the Applicants' allegedly obvious claim elements. Therefore, Applicants respectfully submit that the asserted combination of references fails to disclose the manufacturing methods of independent claims 6 and 9.

Claims 7-8 and 10-15 depend from independent claims 6 and 9 and are likewise patentable over the asserted combination of references for at least their dependence on an allowable base claim, as well as for the additional features they recite. Accordingly, withdrawal of the rejections of claims 6-15 is respectfully requested.

New Claims 16-18

New claims 16 and 17 depend from claims 6 and 9, respectively, and recite "wherein said temperature-adjustable sample holder is directly disposed on said temperature-adjustable second substrate holder" (emphasis added). The Applicants appreciate the indication of the Examiner in the Interview Summary that this feature appears to overcome the rejection of the art of record.

For example, as indicated by the Examiner on page 4 of the Office Action, Bagley delineates a substrate support frame (14) comprising vertically aligned sample holders (28). Within the support frame, heating coils (20) are embedded to promote temperature control of the substrates disposed on the sample holders. However, unlike claims 16 and 17 that recite wherein the sample holder is "directly disposed" on the second substrate holder, Bagley only discloses a frame have heated vertical sides. Nowhere does Bagley suggest "wherein said

temperature-adjustable sample holder is directly disposed on said temperature-adjustable second substrate holder,” as recited in new claims 16 and 17.

New claims 18 and 19 depend from claims 6 and 9, respectively, and recite “wherein said elevating portion is self-rotating.” Nowhere do the applied references disclose, teach, or suggest this feature.

Accordingly, new claims 16-19 are patentable over the asserted combination of references for at least their dependence on an allowable base claim, as well as for the additional features they recite.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

The Examiner is invited to telephone the undersigned, Applicants' attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
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